

REMARKS

It is noted that the requirement for restriction has been made final. It is also noted that the election requirement has been withdrawn. This withdrawal is appreciated.

Rejection Under 35 U.S.C. § 101

Reconsideration is requested of the rejection of claims 18-35 under 35 U.S.C. § 101. The basis given in the Office Action for this rejection is the contention that the claimed invention lacks patentable utility. The Action states that the claims "are to a contaminated water and chlorine composition." These contentions are respectfully traversed as they are in error.

First of all, we interpret the word "contaminated" in its ordinary sense. According to the Random House Webster's Unabridged Dictionary, page 438, the primary definition of "contaminate" is "to make impure or unsuitable by contact or mixture with something unclean, bad, etc.: *to contaminate a lake with sewage.*" Reference to independent Claims 18, 25, 32, and 34 shows that all of the claims in the case (18-35) are directed to "a composition having microbiocidal activity". Certainly a quantity of water having microbiocidal activity is a useful composition as it is able to kill bacteria, algae, biofilm, etc. with which it comes into contact or which comes in contact with it over time. None of the claims in the case requires a contaminated composition.

Moreover, contrary to the contention in the Office Action, the present claims are not directed to a chlorine composition. The claims are directed to compositions with which at least one 1,3-dibromo-5,5-dialkylhydantoin or 1,3-dibromo-5,5-dimethylhydantoin has been combined. The claims use the words "free chlorine" because this is the term commonly used by those of ordinary skill in the art to which this invention relates. As pointed out in paragraph 0005 of the present specification: "Persons using biocidal agents in the biocidal treatment of water customarily, if not universally, refer to 'free chlorine' level as a measure of biocidal control." Again, in paragraph 0021 of the present specification it is stated:

At the outset it should be understood that the terms "free chlorine" and "total chlorine" are terms commonly used by persons in the fields of industrial and

recreational water treatment. The values for the levels of "free chlorine" and "total chlorine" in the water are determined by use of appropriate standard test procedures which differentiate between the two. Further, the terms "free chlorine" and "total chlorine" are not restricted to just chlorine species in the water but rather, include certain bromine species in the water as well. Thus in a case where a biocidal agent used in treating the water contains both bromine and chlorine atoms (*e.g.*, BCDMH), the "free chlorine" and "total chlorine" levels determined in the respective appropriate test procedures used would include quantification of the sum of the bromine species and chlorine species present that respond to the respective tests. The sum of these respective levels is reported, however, as "free chlorine" or "total chlorine", depending on the test used. Similarly, if the water treating agent used contains bromine atoms but no chlorine atoms, the "free chlorine" and "total chlorine" levels determined in the respective appropriate standard test procedures used would involve quantification of the level of bromine species present that respond to the respective tests. Thus although the halogen species actually present in such case are bromine-containing species, the levels present as determined in the respective tests would be reported as "free chlorine" and "total chlorine", respectively.

Because the claimed compositions have microbiocidal activity, they are obviously useful. Thus the contention that there is no utility for the presently claimed subject matter is incorrect.

Accordingly, the support upon which this § 101 rejection is based is incorrect and the rejection itself is without any factual support or foundation. Therefore, reconsideration and withdrawal of this rejection are requested.

Rejection Under 35 U.S.C. § 112, First Paragraph

The Action contends that although being enabling for water, hydantoin, and free chlorine, the specification does not reasonably supply enablement for water with microbiocidally-effective quantities of hydantoin/chlorine required to effect microbiocidal activity in that water.

In the first place, Dr. Nalepa, one of the Applicants, points out that biocides must be registered with the EPA and applied under EPA pesticide guidelines, according to label directions. Such label directions appear on the packages themselves and are available to anyone, for example, via the internet. Thus, this information, if not already known, is readily available to any person, even those not of ordinary skill in the art.

Secondly, the claims themselves call for the water to contain “a microbiocidally-effective quantity” (Claims 18-24; 32-33), and “a microbiocidally-effective amount of free chlorine” (Claims 25-31; 34-35). The specification makes crystal clear that because of greater effectiveness the dibromodialkylhydantoins of the present claims can be used in smaller quantities than customarily used for BCDMH in order to achieve the same effectiveness or in the same quantities if one wants greater effectiveness. Thus, there is a significant range of proportions available to and readily known to those of ordinary skill in the art. And, although unlikely, if one needed further information, it is a simple matter for one of ordinary skill in the art to conduct a few tests to optimize the amount to be used. And since the EPA pesticide guidelines control the limits of use, one must adhere to those guidelines. In this connection, the label satisfying the guidelines approved by the EPA for DBDMH (XtraBrom 111 Biocide, registration No. 3377-62) states “add sufficient XtraBrom 111 Biocide to achieve a residual bromine level of 0.5-5 ppm or as needed to maintain control”. Indeed, U.S. Pat. No. 6,565,868 issued May 20, 2003, the grandparent of the present application, the disclosure of which has been incorporated in the present application (see paragraph numbers 0001 and 0126) has already taught the art in column 5 that “[t]ypically, dosages of 1,3-dibromo-5,5-dimethylhydantoin used for this purpose [microbiological control and/or substantial biofilm eradication] will fall within the range of about 0.2 to about 10 milligrams of bromine as Br₂ per liter of water.”

It is further contended in the Action that “[i]t is not at all clear what purpose is achieved by having a composition of contaminated water treated with a chlorine releasing agent and containing free chlorine, and how one is to use this free Cl containing composition of water.” Here again, the contention that the composition calls for contaminated water has no basis in fact whatsoever. Nor is a chlorine releasing agent containing free chlorine used. The composition

is made from at least one specified dibromohydantoin which does not contain chlorine. The reason for the references to "free chlorine" in the claims are made clear above and is well known to those of ordinary skill in the art. Please see the two excerpts quoted above, (*i.e.*, paragraphs 0005 and 0021) regarding the § 101 rejection. Such excerpts apply equally well here. And as to how to use the composition, the use depends upon the nature of the body of water. Thus, as shown in Example 2, the body of water sanitized pursuant to this invention used in a cooling tower is circulated in a conventional manner over cooling surfaces in order to effect the desired cooling of an installation. Similarly, in the case of recreational water, the body of water, for example, in a swimming pool sanitized pursuant to this invention, is contained in the swimming pool so that one can swim in it. If the water is wastewater, the wastewater is sent to proper disposal after being sanitized pursuant to this invention. We see no basis for a contention that use is not apparent to anyone of ordinary skill in the art.

Therefore reconsideration and withdrawal of this § 112 rejection are requested.

Rejection Under 35 U.S.C. § 103

Reconsideration and withdrawal of the rejection under 35 U.S.C. 103(a) are requested. This rejection is based on a combination of three references, namely, Smith 4,925,866 in view of White et al. 4,119,535, and Howarth & Nalepa -2001.

Enclosed herewith and marked for identification as Howarth et al. Exhibit A is a copy of a portion of the 2001 International Water Conference - On-Site Program which, as shown by the document itself, occurred on October 21-25, 2001. On page 12 thereof, the Howarth & Nalepa -2001 IWC-01-05-paper is identified as being presented on the Monday session of that conference. In other words, the paper was publically presented in an oral presentation on October 21, 2001. Applicant Nalepa advises that the practice of the International Water Conferences at that time was to make available for sale at the outset of the conference, copies of the papers to be delivered at the conference. Thus, on the morning of October 21, 2001 the Howarth & Nalepa -2001 IWC-01-05-paper was made available to the public.

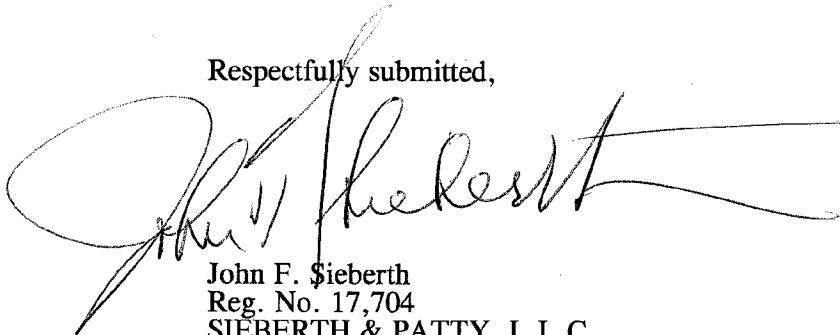
It will be noted that the present Application is a division of Application No. 09/775,516 filed February 2, 2001, now U.S. Pat. No. 6,641,828. It will be seen that except for details within the first two paragraphs of the specification of the '828 parent patent and the first two paragraphs of the specification of the present Application, the relevant text describing the present invention appears through Table 13 of U.S. 6,641,828. Then, some of the text is transposed in the patent but essentially all of the remaining disclosure of the specification is present, although in rearranged format. This apparently occurred as a printing error on behalf of the PTO. It is thus clearly apparent that the present Application is entitled to a priority date at least as early as February 2, 2001. Since that date is well prior to the October 21, 2001 publication date of the Howarth & Nalepa -2001 IWC-01-05-paper the Howarth & Nalepa paper is not available for use as a prior art reference.

Thus, the rejection, which, as applied, requires all three documents, is not supported by the combination of documents sought to be applied. Accordingly, either further action or a Notice of Allowability would be appreciated.

If, however, any matters remain requiring further consideration that may be expedited by discussion, the Examiner is requested to telephone the undersigned at the number given below so that such matters may be discussed and, if possible, promptly resolved.

Please continue to address all correspondence in this Application to Mr. Spielman at the address of record.

Respectfully submitted,

A large, stylized handwritten signature in black ink, which appears to read "John F. Sieberth". The signature is written over the typed name and address.

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International Water Conference

On-Site
Program

October
21-25

Omni
William Penn Hotel

Pittsburgh
Pennsylvania
USA

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Future IWC Dates:

OCTOBER 21-23, 2002

Westin William Penn Hotel – Pittsburgh, PA

OCTOBER 20-22, 2003

Westin William Penn Hotel – Pittsburgh, PA

OCTOBER 18-20, 2004

Westin William Penn Hotel – Pittsburgh, PA

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The opinions expressed in this program are not necessarily those of the International Water Conference Executive Committee, Advisory Council or the Engineers' Society of Western Pennsylvania. Speakers and program content are subject to change.

A Message From the Conference Chair



The Executive Committee, The Advisory Council, and the Engineers' Society of Western Pennsylvania welcome you to Pittsburgh for the Annual International Water Conference. This year marks the 62nd year of this prestigious conference.



In our fast paced society, it has become increasingly difficult to carve out time for personal and professional development. The 2001 **International Water Conference** offers you this opportunity. A survey done of last year's Conference attendees revealed the number one reason they attended IWC was for **technology and knowledge**. The second most common reason was **networking**. This year's Conference continues to offer you even more opportunities for both.

A fine technical program covering cooling water, steam generation, membrane technology, ion exchange, *legionella*, and conservation and reuse is detailed inside. The IWC is perhaps the only Conference of its kind to offer the breadth of coverage of technical subjects in the water treatment field.

There are a variety of opportunities for you to network with your peers at the Conference, beginning with the traditional places such as the hallways of the meeting floor, Info Share and Hospitality suites. Additionally, exhibit booths were introduced for the first time to the Conference last year and the response to this new feature was very enthusiastic. For this year we have doubled the amount of exhibit space, offering you the chance to meet with even more suppliers and get a better understanding of the latest in products and services for the water treatment industry.

We hope you will enjoy the 62nd Annual International Water Conference this year in Pittsburgh. There have been many exciting changes to the city and the Conference, and we look forward to providing a rich and rewarding Conference.

Fred Potthoff
Kroff Chemical Company
2001 General Chair

Agenda at a Glance		Grand Ballroom (17th Floor)	Urban Room (17th Floor)	Monongahela Room (17th Floor)	William Penn Lev
Monday, October 22 Opening Session 8:30am - 9:30am • Grand Ballroom					
Morning Technical Sessions 10:00am - Noon		Ion Exchange	Microorganism Control in Process Water Systems Part 1	Monitoring Systems in the Power Industry	
Break for Lunch Noon - 2pm					
Afternoon Technical Sessions 2:00pm - 5:00pm		Process Applications of Ion Exchange Systems	Microorganism Control in Process Water Systems Part 2	TOC in Power Plants: Sources, Effects, Removal Methods	Exhibit Hall Open Noon-2pm
					Exhibit Hall Open 4:30-7pm

Agenda at a Glance		Grand Ballroom (17th Floor)	Urban Room (17th Floor)	Monongahela Room (17th Floor)	William Penn Level
Tuesday, October 23					
Morning Technical Sessions: 8:00am - Noon		Pretreatment/Troubleshooting for Membrane Processes	Understanding & Controlling Legionella in Industrial Water Systems	Steam Water Cycle Chemistry Control – Practical Applications	
Attendees Lunch in Exhibit Hall Noon - 2pm					
Afternoon Technical Sessions: 2:00pm - 5:00pm		Applications of Membrane Processes	Innovations in Cooling Water Treatment	Business and Management Issues for Suppliers and Vendors	Exhibit Hall Open Noon-2pm (Final Hours)
Wednesday, October 24					
Morning Technical Sessions: 8:00am - Noon		Designing Comprehensive Water Reuse & Conservation Processes	Non-Traditional Treatment Methods for Cooling Water Systems	Cleaning, Layup & Corrosion Protection of Steam Generating Systems	



The International Water Conference is supported by the 45 companies of the IWC Advisory Council. Recognized as leaders in the water treatment field, the Advisory Council members provide unique insight into the industry and advise the IWC Executive Committee on matters that will improve the Conference.

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General Conference Information



Pittsburgh Attractions

Pittsburgh is a dynamic city with a strong industrial heritage. It features beautiful parks, rivers, and more golf courses per capita than any city in the United States. Visitors can enjoy an interactive science center, world-class museums and riverboat cruises along the city's three rivers.

Pittsburgh's compact Golden Triangle puts you within easy walking distance of more than a dozen historical and cultural attractions, architectural landmarks, professional sports, great shopping and restaurants to delight every taste. When it comes to dining, the choices range from casual family-style restaurants to a forgotten train station that has been transformed into a stunning restaurant, shopping and entertainment complex. A quick incline ride to scenic Mt. Washington not only provides you with a wide range of choices for both casual and elegant dining but delivers a spectacular view of the city. There's also our river-front boardwalk featuring nautical-theme restaurants and nite-life.

For detailed information on restaurants, museums, shopping and other things to do and see in Pittsburgh, please visit our **Information Table** on the 17th Floor near the Registration Desk.

Run Around the Rivers

We're going to do it again! Run, or if you wish, walk around beautiful downtown Pittsburgh and some of its three rivers at dawn. This will be our seventh year.

Time: Tuesday morning, October 23 at 7:00a.m.
Place: Omni William Penn Hotel, William Penn Place
Entrance (across from the park)
Distance: Approximately 3.0 miles — Whether you're walking or running, it's sure to be a fun-filled workout.
Sponsored by: ResinTech, Incorporated

Registration Desk

The Registration Desk is located in the 17th Floor Coat Room. Hours of Operation are:

Monday	7:30 am to 5:00 pm
Tuesday	7:30 am to 5:00 pm
Wednesday	7:30 am to 12:00 pm

General Conference Information



Name Badge Identification

Please wear your badge on your right side at all times. Your badge is your passport to Technical Sessions, the Exhibit Hall and International Water Conference social functions. In addition, important local phone numbers have been printed in the back of your badge for your use.

Message Board

As a service to conference registrants, a Message Board will be located at the Registration Desk on the 17th floor. The board will be maintained by the registration staff from 8:00 a.m. Monday through noon on Wednesday. The messages will be retained until the end of each day.

Registration Lists

Registrations received prior to **Friday, October 12** have been compiled in THE IWC REGISTRATION LIST. This popular service sponsored by **Nalco Chemical Co.** provides attendees with additional networking opportunities.

An Addendum will be available the morning of **Wednesday, October 24**. It will contain those attendees that registered after October 12 and on-site during the Conference.

An Electronic version of the full Registration List will be available at the Registration Desk the morning of Wednesday, October 24. It provides the names of all registered attendees in both Excel and comma-delimited text formats. There is a \$25 administrative charge.

Pre-print Room

Pre-prints for all technical presentations are available at the Pre-Print Room located in the 17th Floor Foyer. Pre-prints can be purchased for just \$2.00 per copy. Also, you can find copies of previous years' IWC Proceedings (for \$55 per volume). The Pre-Print Room will be open Sunday evening 6:00 pm to 8:30 pm, Monday and Tuesday – from 8:00 am to 5:00 pm, and Wednesday 8:00 am to 1:00 pm.

Americans with Disabilities Act

The International Water Conference and ESWP support the Americans with Disabilities Act (ADA), which prohibits discrimination against, and promotes public accessibility for those with disabilities. We ask those requiring specific equipment or services as an attendee to contact the IWC staff at the Registration Desk and advise us of any such requirements.

General Conference Information

Hotel Information

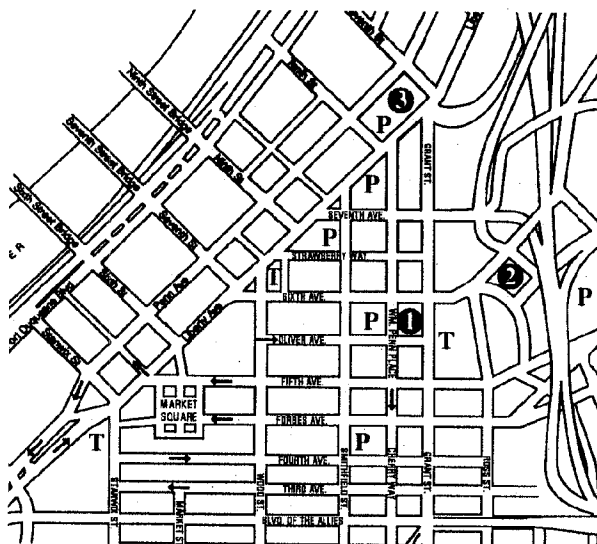
Omni William Penn Hotel	(412) 281-7100
Westin Convention Center Pittsburgh Hotel	(412) 281-3700
Ramada Plaza Suites	(412) 281-5800

Shuttle Service

Shuttle buses will operate at regular intervals between the Omni William Penn and the Westin Convention Center Pittsburgh and Ramada. Buses will depart from the main entrance of each hotel.

Hours of Operation:

Sunday, October 21, 2001	5:00 p.m. - 10:00 p.m.
Monday, October 22, 2001	7:00 a.m. - midnight
Tuesday, October 23, 2001	7:00 a.m. - midnight
Wednesday, October 24, 2001	7:00 a.m. - 2:00 p.m.



Key

- P** Parking
- T** Light Rail Station
- 1** Omni William Penn
- 2** Ramada Plaza Suites
- 3** Westin Convention Center
Pittsburgh



Annual Merit Award

Each year, the International Water Conference presents the Annual Merit Award to honor outstanding individuals in the field of industrial water technology. This year's Merit Awardee is **Robert Cunningham, Chemisis, Inc.**

Paul Cohen Award

As a memorial to Paul Cohen and his contributions to the power generation industry, the IWC is proud to recognize the authors of the most precise and innovative presentation in the field of power systems water technology that was presented at the 61st Annual Water Conference. This year we honor **Robert Holloway**, as the author of the paper IWC-00-31 *"The Importance of Boiler Feedwater Purity."*

7:30am

Registration desk opens, 17th Floor

Opening Ceremonies

8:30-9:30AM

GRAND BALLROOM, 17th FLOOR

General Chair:

Fred D. Potthoff, Kroff Chemical Company
Pittsburgh, PA

Presentation of Paul Cohen Award

Presentation of Annual Merit Award

Keynote Speaker:

Donald P. Fusilli, Jr., P.E., J.D.
President and CEO,
Michael Baker Corporation

9:40-10:00AM

Coffee Break

Ion Exchange

10AM-NOON

GRAND BALLROOM, 17th FLOOR

Session Chair:

Phil Fatula, Bayer Corporation,
Pittsburgh, PA

IWC Representative:

David Simon, Cyrus Rice Water
Consultants, Pittsburgh, PA

Discussion Leader:

Ed Nace, Rohm and Haas Company,
Philadelphia, PA

10:00am

**The Sulfate Problem: What Happens if
Resins Just Sit?**

IWC-01-01 Paper

Sallie Fisher and Michelle Donnelly-Kelleher,
Puricons, Inc., Malvern, PA

Do initial test results predict what happens in the interval after sulfonic cation resins are made and tested for sulfate-sulfonate sloughage and the time they are put into service? Take a look at retest results three months to three years later.

10:25am

Prepared Discussion: Michael A. Sadler,
Consultant, Bristol, England

10:35am

Closure & Floor Discussion

Technical Sessions

Monday

10:50am

New Ion Exchange Resin Designs and Regeneration Procedures Yield Improved Performance for Various CP Applications

IWC-01-02 Paper

Stephen W. Najmy, Dow Chemical, Midland, MI

This paper describes several examples of condensate polishing systems – each one benefiting from the use of either a new resin product design, a modified resin handling procedure or a combination thereof. Real data is presented to support the merits of each new resin and/or procedural development.

11:15am

Prepared Discussion by: Eli Salem, Consultant, Dal, NJ

11:25am

Closure & Floor Discussion

11:40am

A Quantum Leap in CPP Ion Exchange Resin Technology

IWC-01-03 Report

Tomoaki Ito, Organo Corporation, Toda City, Saitama, Japan; Tomoaki Itoh, Organo Corporation, Koto-ku, Tokyo, Japan; Shintaro Tsuzuki, Rohm and Haas Japan, Minatoku, Tokyo, Japan

This paper describes new generation condensate polishing resin with superior oxidative stability, ion transport kinetics reliability and cleanliness. The product is a unique combination of super high exchange capacity cation and high fouling resistant anion exchange resin. The resin has been installed at three major PWR nuclear power stations.

12:00pm

Floor Discussion

Noon-2pm

Exhibit Hall Open, WP Level

Microorganism Control in Process Water Systems, Part 1

10AM-NOON URBAN ROOM, 17th FLOOR

Session Chair: Patrick Gill, Advant Chemical, Inc., Coraopolis, PA

IWC Representative: James Datesh, Dacar Industries Incorporated, Pittsburgh, PA

10:00am

A Review and Comparison of MIC Indices (Models)

IWC-01-04 Paper

Richard W. Lutey, R.W. Lutey & Associates, Inc., Memphis, TN; Arthur Stein, Stone & Webster Engineering, Inc., Boston, MA

This paper presents a review of the development of current indices or models related to defining the status of microbiologically influenced corrosion (MIC) in cooling water and related industrial process water systems. The indices are used to predict the potential for MIC occurrence at a specific site in a process water system. Three different indices are compared based on results obtained over eight years from six power generating unit service water systems.

10:25am

Prepared Discussion by: Art Freedman, Arthur Freedman Associates, East Stroudsburg, PA

10:35am

Closure & Floor Discussion

10:50am

New, Bromine-Releasing Solid for Microbiological Control of Cooling Water

IWC-01-05 Paper

Jonathan Howarth and CJ Nalepa, Albemarle Corporation, Baton Rouge, LA

A new, solid, bromine-releasing biocide has been developed for microbiological control of cooling water. The material contains almost twice the amount of bromine than its closest solid counterpart. Several case histories are reviewed which demonstrate improved performance and cost-effectiveness over traditional bromination technologies.

11:15am

Prepared Discussion: to be announced

11:25am

Closure & Floor Discussion